FIG. 1

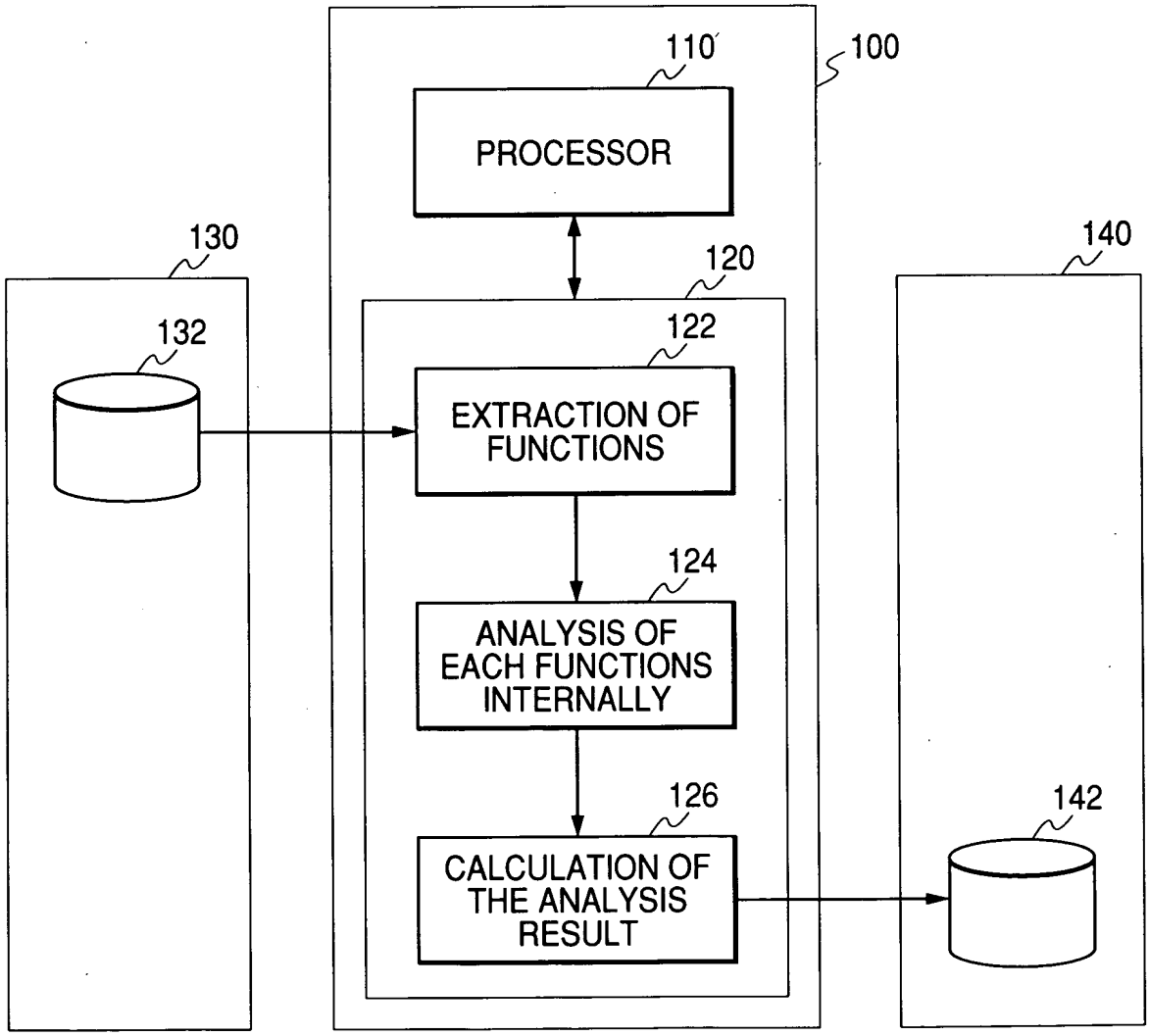

FIG. 2

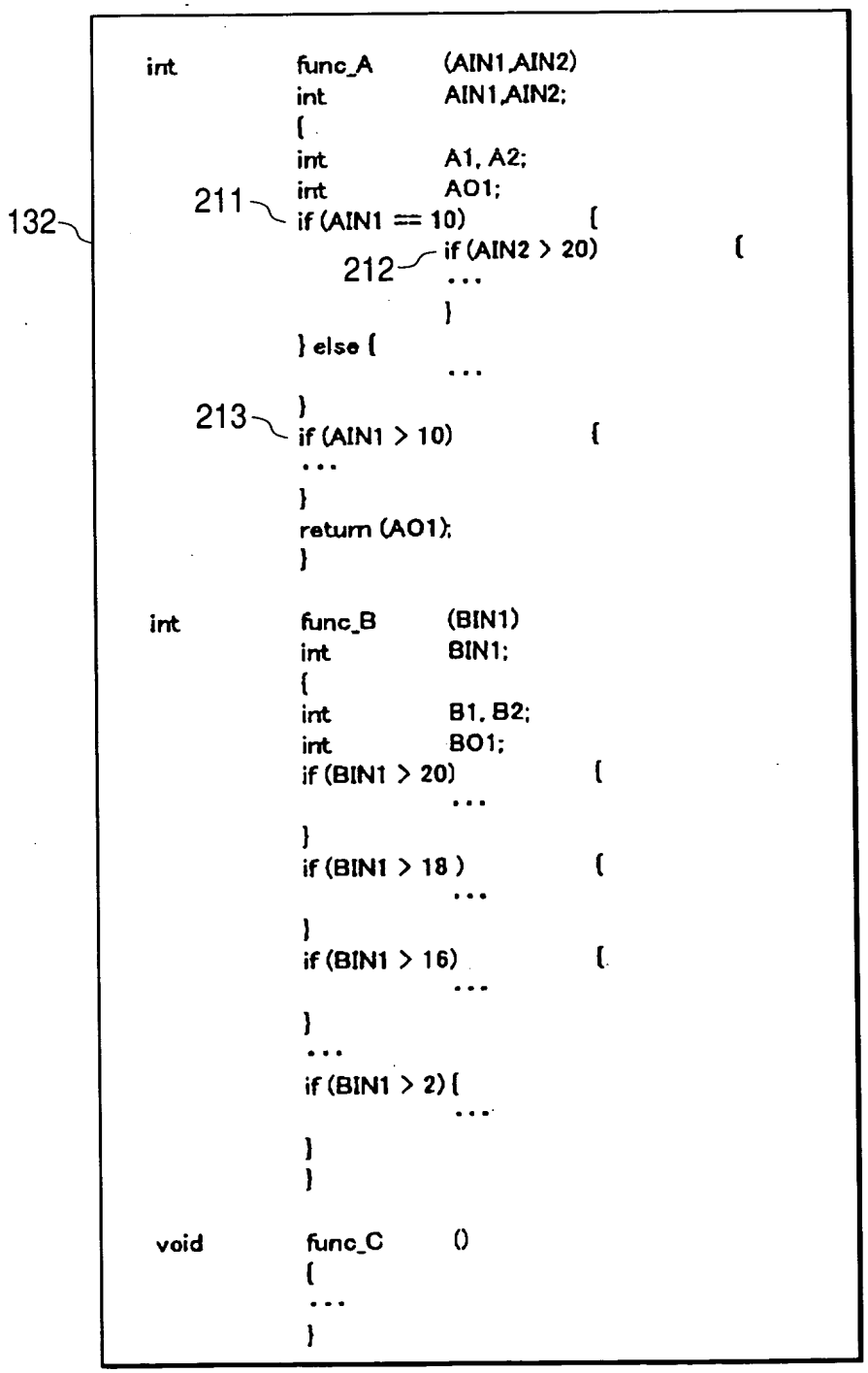
132
211
212
213
int func_A (AIN1,AIN2)
int AIN1,AIN2;
{
int A1, A2;
int AO1;
if (AIN1 == 10) {
if (AIN2 > 20) {
...
}
} else {
...
}
if (AIN1 > 10) {
...
}
return (AO1);
}
int func_B (BIN1)
int BIN1;
{
int B1, B2;
int BO1;
if (BIN1 > 20) {
...
}
if (BIN1 > 18) {
...
}
if (BIN1 > 16) {
...
}
...
if (BIN1 > 2) {
...
}
}
void func_C ()
{
...
}

FIG. 3

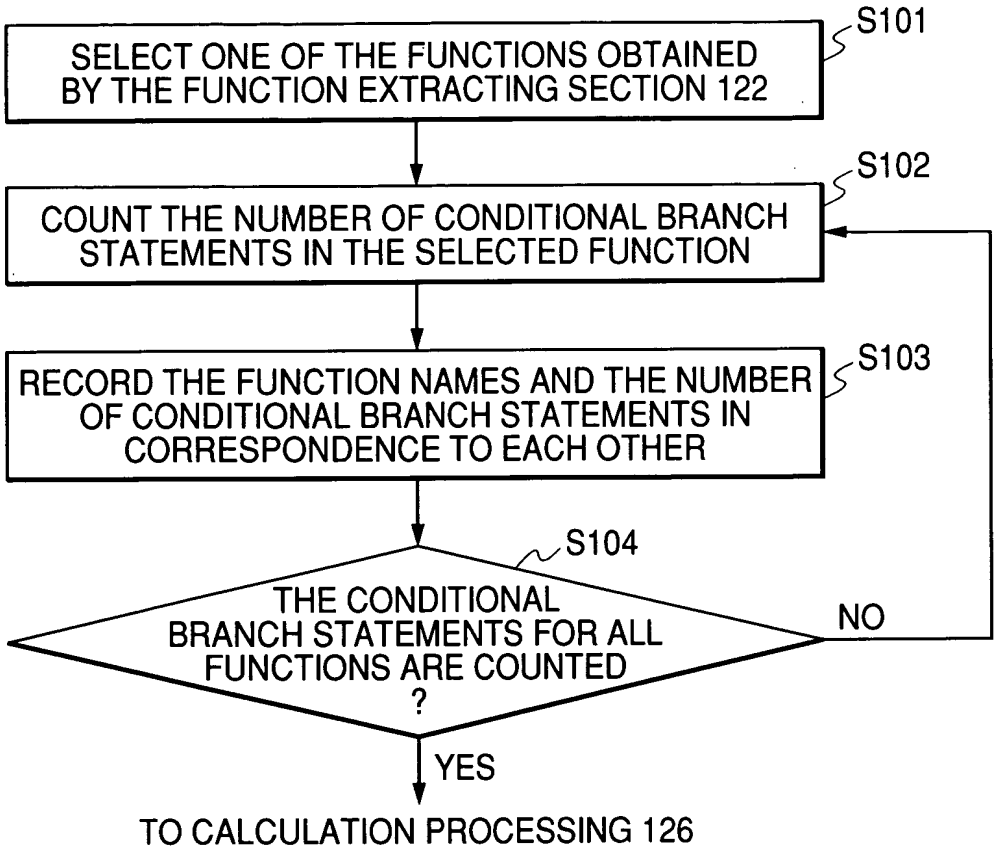

FIG. 4

FUNCTION NAME	NUMBER OF CONDITIONAL BRANCH STATEMENTS
func_A	3
func_B	10
func_C	0

FIG. 5

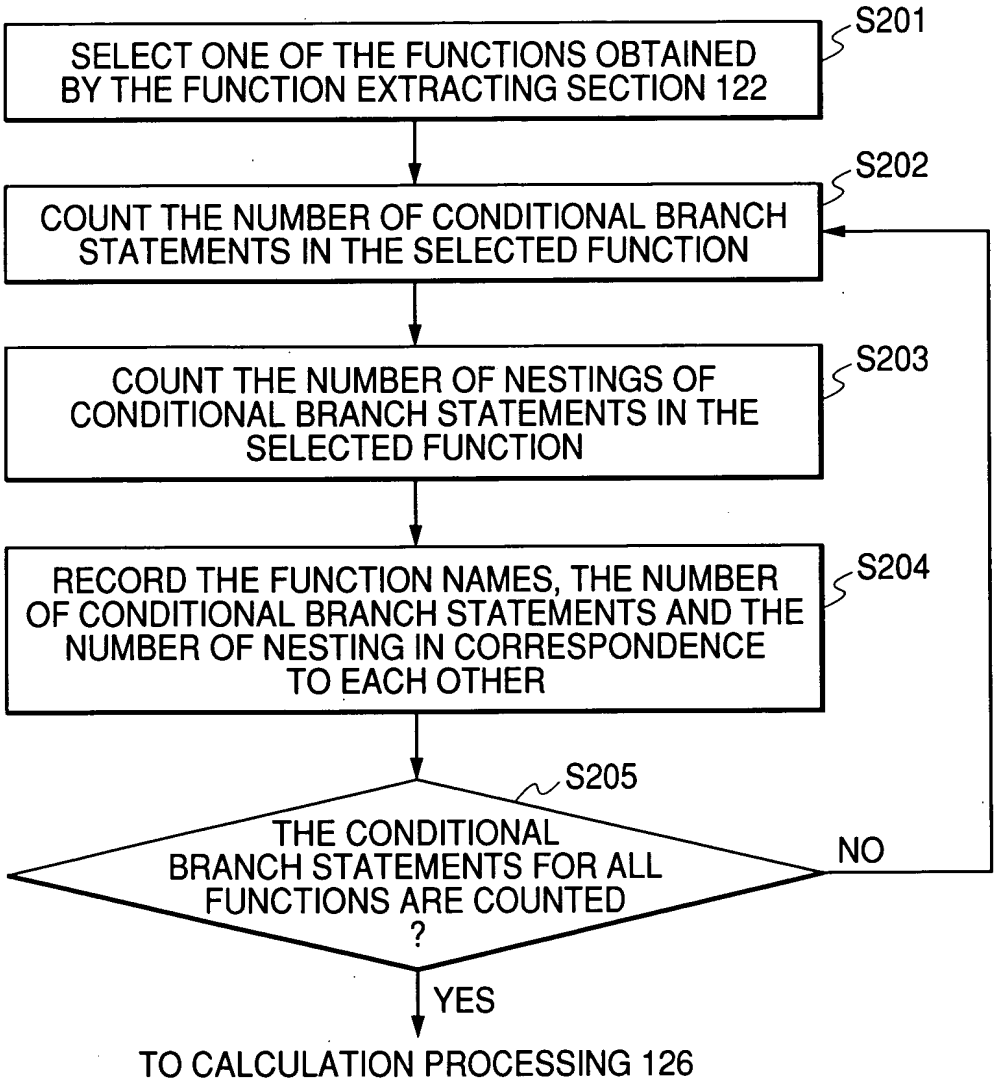
SELECT ONE OF THE FUNCTIONS OBTAINED BY THE FUNCTION EXTRACTING SECTION 122
S201
COUNT THE NUMBER OF CONDITIONAL BRANCH STATEMENTS IN THE SELECTED FUNCTION
S202
COUNT THE NUMBER OF NESTINGS OF CONDITIONAL BRANCH STATEMENTS IN THE SELECTED FUNCTION
S203
RECORD THE FUNCTION NAMES, THE NUMBER OF CONDITIONAL BRANCH STATEMENTS AND THE NUMBER OF NESTING IN CORRESPONDENCE TO EACH OTHER
S204
S205
THE CONDITIONAL BRANCH STATEMENTS FOR ALL FUNCTIONS ARE COUNTED ?
NO
YES
TO CALCULATION PROCESSING 126

FIG. 6

FUNCTION NAME	CONDITIONAL BRANCH STATEMENT		
	NUMBER	NUMBER OF NESTINGS	
		NUMBER OF NESTING STAGE	NUMBER OF CORRESPONDING CONDITIONAL BRANCH STATEMENTS
func_A	3	0	2
		1	1
func_B	10	0	10
func_C	0	0	0

FIG. 7

132

```
                func_A      (AIN1,AIN2)
                int         AIN1,AIN2;
                {
                int         A1, A2;
                int         AO1;
211             if (AIN1 == 10)          {
                    if (AIN2 > 20)           {
212                 ...
                    }
                } else {
                    ...
213             }
                if (AIN1 > 10)           {
                ...
                }
                return (AO1);
                }

void            func_D      ()
                {
711             int         D1, D2, D3;
                D2 = func_A1 ( D1 );
                AIN1 = func_A2 ( D2 );
712             ...
                D3 = func_A ( AIN1, D2 );
                }
```

FIG. 8

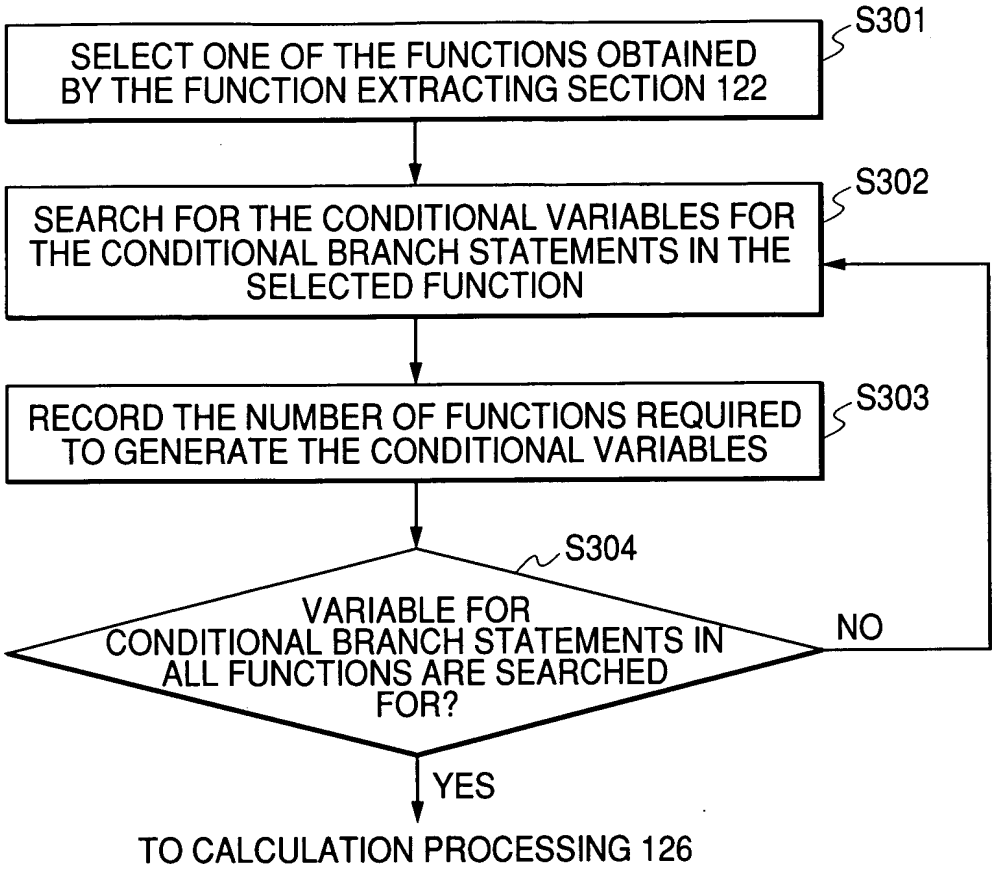

FIG. 9

FUNCTION NAME	CONDITIONAL BRANCH STATEMENT		
	NUMBER	VARIABLE GENERATION	
		NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES
func_A	3	2	1
		0	1
func_D	0	0	0

FIG. 10

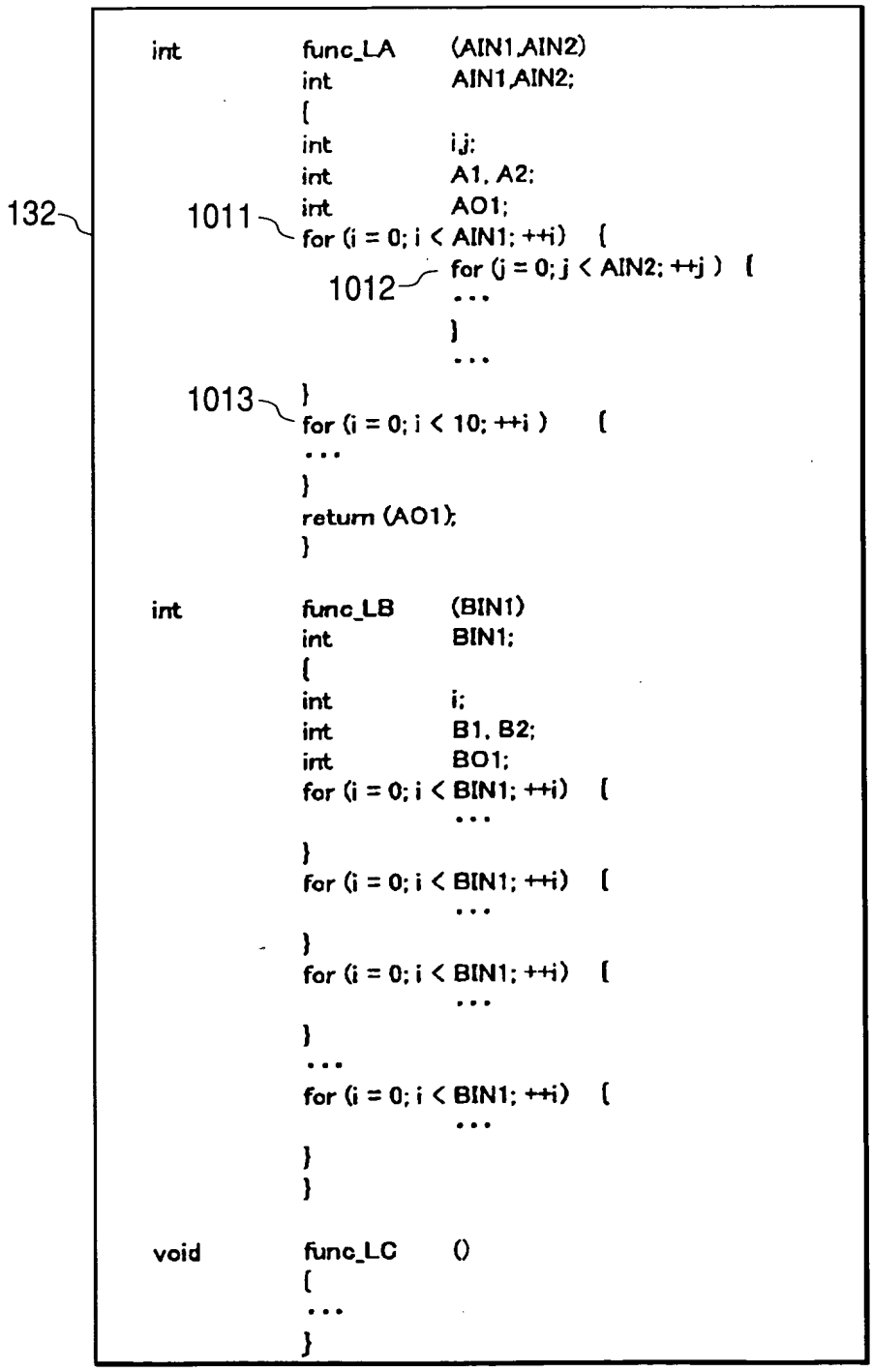
132
1011
1012
1013
int func_LA (AIN1,AIN2)
int AIN1,AIN2;
{
int i,j;
int A1, A2;
int AO1;
for (i = 0; i < AIN1; ++i) {
for (j = 0; j < AIN2; ++j) {
...
}
...
}
for (i = 0; i < 10; ++i) {
...
}
return (AO1);
}
int func_LB (BIN1)
int BIN1;
{
int i;
int B1, B2;
int BO1;
for (i = 0; i < BIN1; ++i) {
...
}
for (i = 0; i < BIN1; ++i) {
...
}
for (i = 0; i < BIN1; ++i) {
...
}
...
for (i = 0; i < BIN1; ++i) {
...
}
}
void func_LC ()
{
...
}

FIG. 11

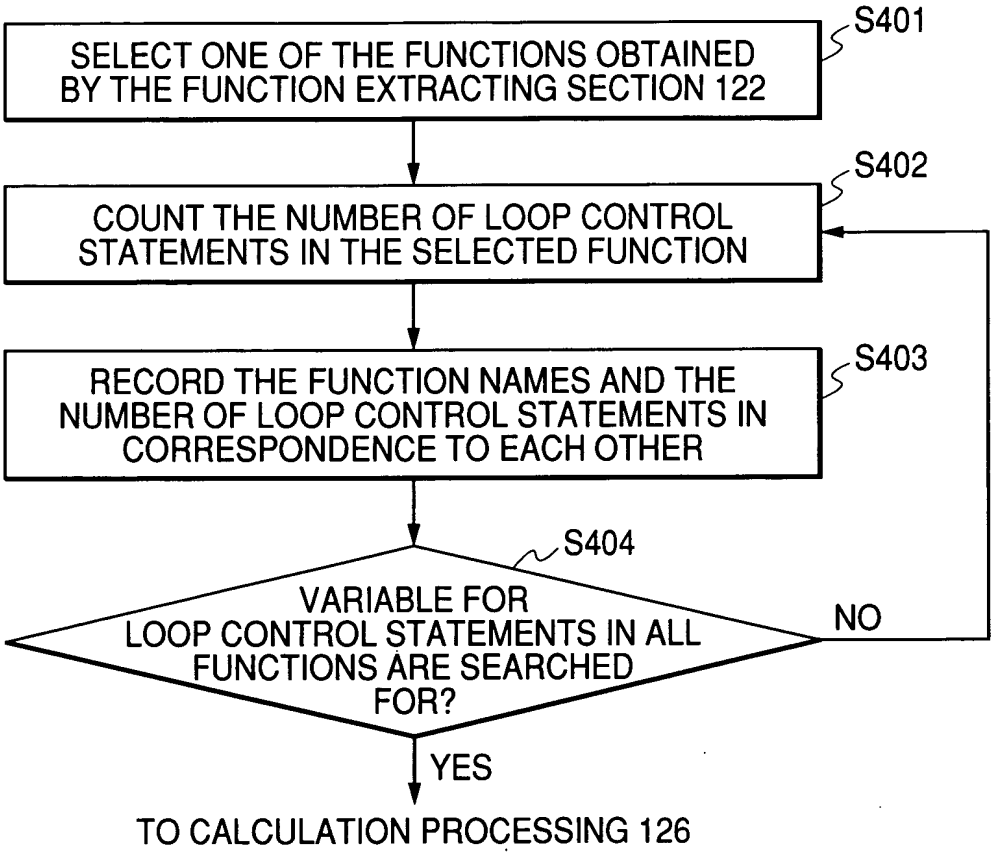

FIG. 12

FUNCTION NAME	NUMBER OF LOOP CONTROL STATEMENTS
func_LA	3
func_LB	10
func_LC	0

FIG. 13

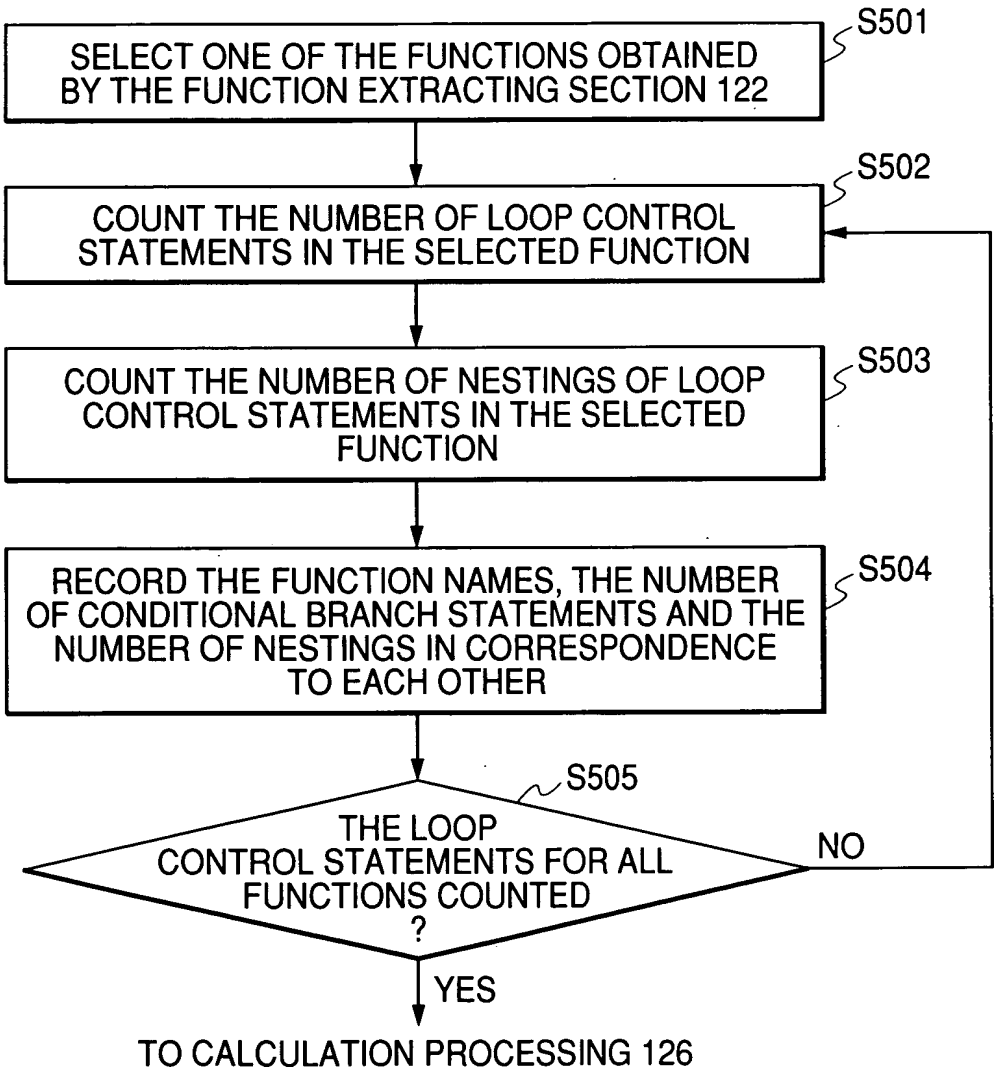
SELECT ONE OF THE FUNCTIONS OBTAINED BY THE FUNCTION EXTRACTING SECTION 122
S501
COUNT THE NUMBER OF LOOP CONTROL STATEMENTS IN THE SELECTED FUNCTION
S502
COUNT THE NUMBER OF NESTINGS OF LOOP CONTROL STATEMENTS IN THE SELECTED FUNCTION
S503
RECORD THE FUNCTION NAMES, THE NUMBER OF CONDITIONAL BRANCH STATEMENTS AND THE NUMBER OF NESTINGS IN CORRESPONDENCE TO EACH OTHER
S504
S505
THE LOOP CONTROL STATEMENTS FOR ALL FUNCTIONS COUNTED ?
NO
YES
TO CALCULATION PROCESSING 126

FIG. 14

FUNCTION NAME	LOOP CONTROL STATEMENT		
	NUMBER	NUMBER OF NESTINGS	
		NUMBER OF NESTING STAGE	NUMBER OF CORRESPONDING LOOP CONTROL STATEMENTS
func_LA	3	0	2
		1	1
func_LB	10	0	10
func_LC	0	0	0

FIG. 15

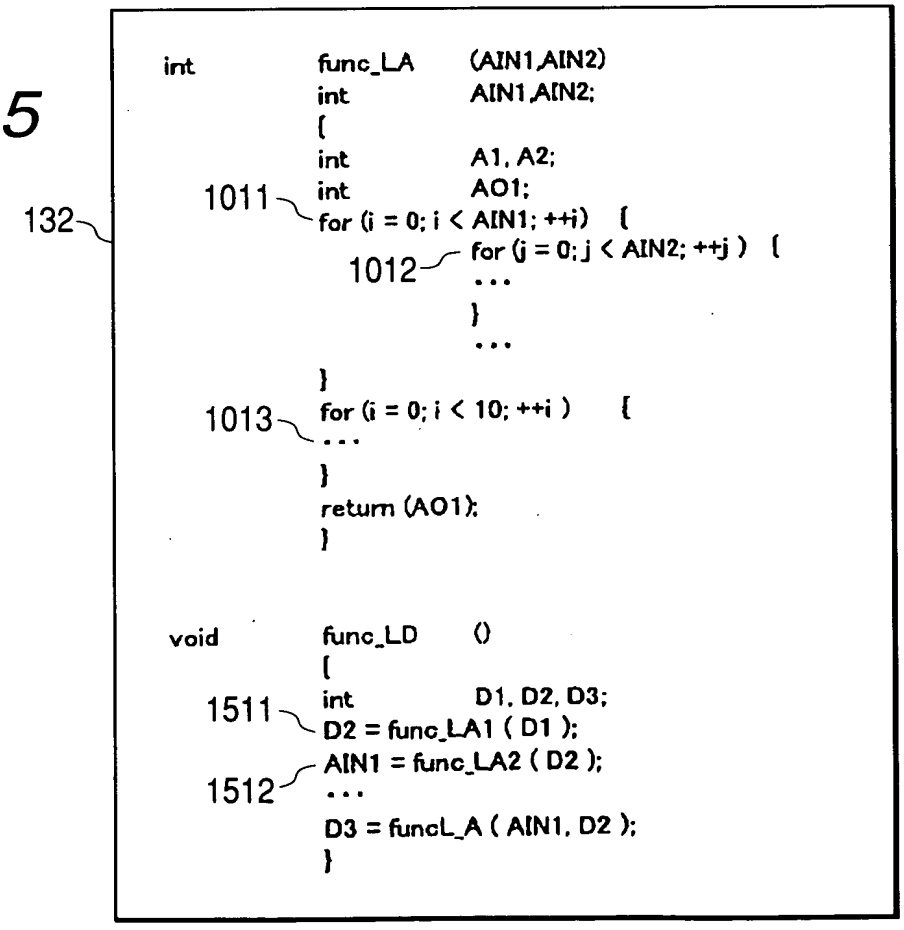

FIG. 16

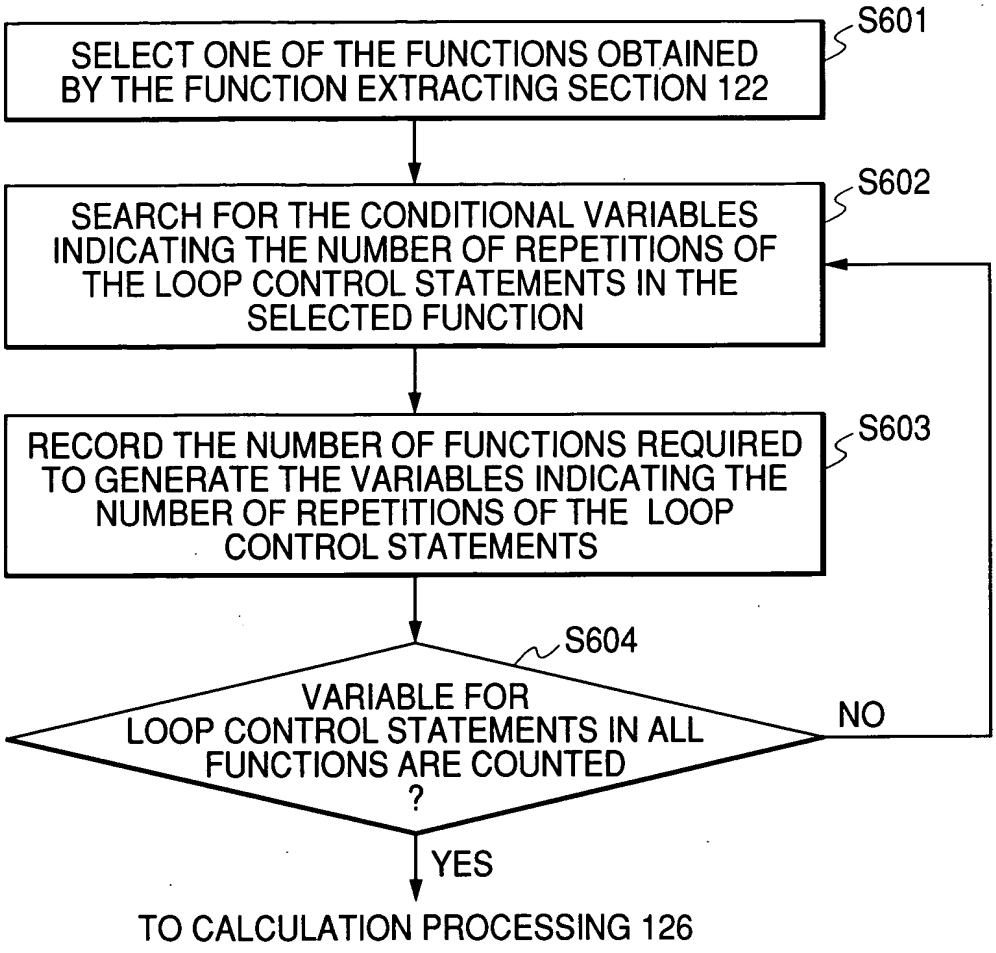

FIG. 17

FUNCTION NAME	LOOP CONTROL STATEMENT		
	NUMBER	VARIABLE GENERATION FOR THE NUMBER OF REPETITIONS	
		NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES
func_LA	3	2	1
		0	1
func_LD	0	0	0

FIG. 18

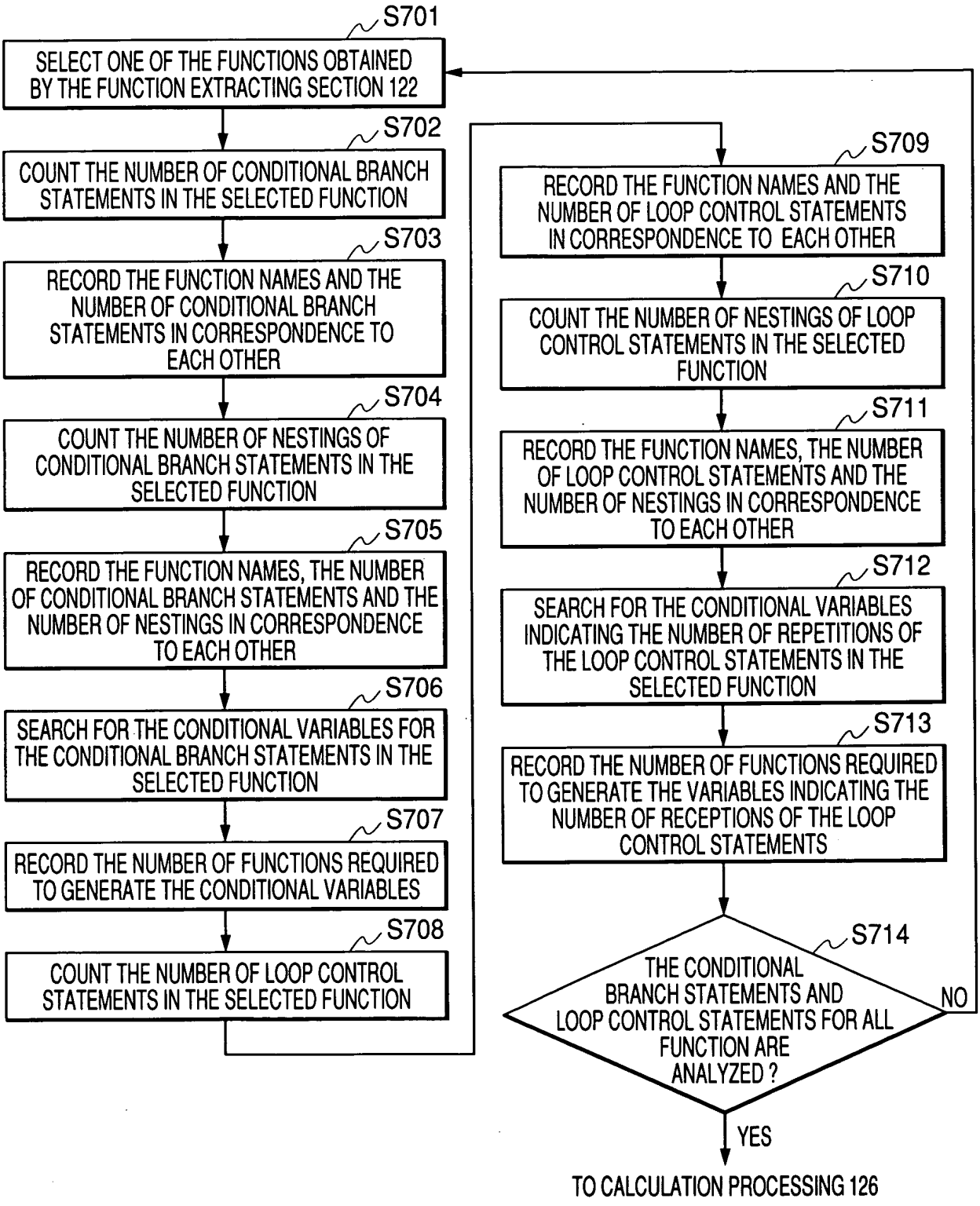
S701
SELECT ONE OF THE FUNCTIONS OBTAINED BY THE FUNCTION EXTRACTING SECTION 122
S702
COUNT THE NUMBER OF CONDITIONAL BRANCH STATEMENTS IN THE SELECTED FUNCTION
S703
RECORD THE FUNCTION NAMES AND THE NUMBER OF CONDITIONAL BRANCH STATEMENTS IN CORRESPONDENCE TO EACH OTHER
S704
COUNT THE NUMBER OF NESTINGS OF CONDITIONAL BRANCH STATEMENTS IN THE SELECTED FUNCTION
S705
RECORD THE FUNCTION NAMES, THE NUMBER OF CONDITIONAL BRANCH STATEMENTS AND THE NUMBER OF NESTINGS IN CORRESPONDENCE TO EACH OTHER
S706
SEARCH FOR THE CONDITIONAL VARIABLES FOR THE CONDITIONAL BRANCH STATEMENTS IN THE SELECTED FUNCTION
S707
RECORD THE NUMBER OF FUNCTIONS REQUIRED TO GENERATE THE CONDITIONAL VARIABLES
S708
COUNT THE NUMBER OF LOOP CONTROL STATEMENTS IN THE SELECTED FUNCTION
S709
RECORD THE FUNCTION NAMES AND THE NUMBER OF LOOP CONTROL STATEMENTS IN CORRESPONDENCE TO EACH OTHER
S710
COUNT THE NUMBER OF NESTINGS OF LOOP CONTROL STATEMENTS IN THE SELECTED FUNCTION
S711
RECORD THE FUNCTION NAMES, THE NUMBER OF LOOP CONTROL STATEMENTS AND THE NUMBER OF NESTINGS IN CORRESPONDENCE TO EACH OTHER
S712
SEARCH FOR THE CONDITIONAL VARIABLES INDICATING THE NUMBER OF REPETITIONS OF THE LOOP CONTROL STATEMENTS IN THE SELECTED FUNCTION
S713
RECORD THE NUMBER OF FUNCTIONS REQUIRED TO GENERATE THE VARIABLES INDICATING THE NUMBER OF RECEPTIONS OF THE LOOP CONTROL STATEMENTS
S714
THE CONDITIONAL BRANCH STATEMENTS AND LOOP CONTROL STATEMENTS FOR ALL FUNCTION ARE ANALYZED ?
NO
YES
TO CALCULATION PROCESSING 126

FIG. 19

FUNCTION NAME	CONDITIONAL BRANCH STATEMENT					LOOP CONTROL STATEMENT				
	NUMBER	NUMBER OF NESTINGS		VARIABLE GENERATION		NUMBER	NUMBER OF NESTINGS		GENERATION OF VARIABLES FOR THE NUMBER OF REPETITIONS	
		NUMBER OF NESTING STAGES	NUMBER OF STAGES NUMBER OF CORRESPONDING CONDITIONAL BRANCH STATEMENTS	NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES		NUMBER OF NESTING STAGES	NUMBER OF CORRESPONDING LOOP CONTROL STATEMENTS	NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES
func_A	3	0	2	2	1	0	0	0	0	0
		1	1	0	1					
func_B	10	0	10	0	1	0	0	0	0	0
func_C	0	0	0	0	0	0	0	0	0	0
func_D	0	0	0	0	0	0	0	0	0	0
func_LA	0	0	0	0	0	3	0	2	2	1
							1	1	0	1
func_LB	0	0	0	0	0	10	0	10	0	1
func_LC	0	0	0	0	0	0	0	0	0	0
func_LD	0	0	0	0	0	0	0	0	0	0

FIG. 20

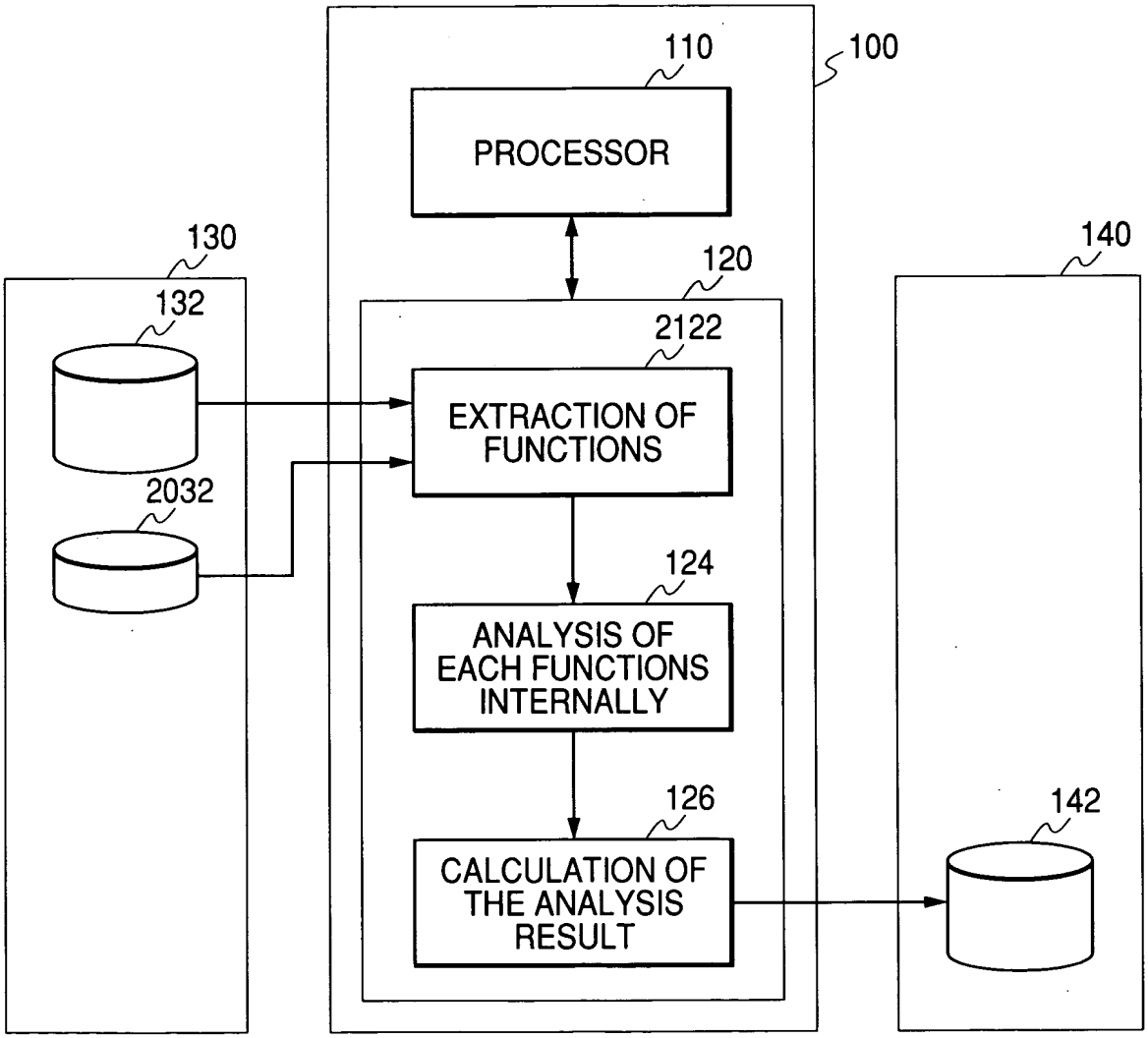
100
110
PROCESSOR
120
130
132
2032
2122
EXTRACTION OF FUNCTIONS
124
ANALYSIS OF EACH FUNCTIONS INTERNALLY
126
CALCULATION OF THE ANALYSIS RESULT
140
142

FIG. 21

FUNCTION NAME	CONDITIONAL BRANCH STATEMENT		
	NUMBER	VARIABLE GENERATION	
		NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES
func_A+func_D	3	2	1
		0	1

FIG. 22

FUNCTION NAME	LOOP CONTROL STATEMENT		
	NUMBER	GENERATION OF VARIABLES FOR THE NUMBER OF REPETITIONS	
		NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES
func_LA+func_LD	3	2	1
		0	1

FIG. 23

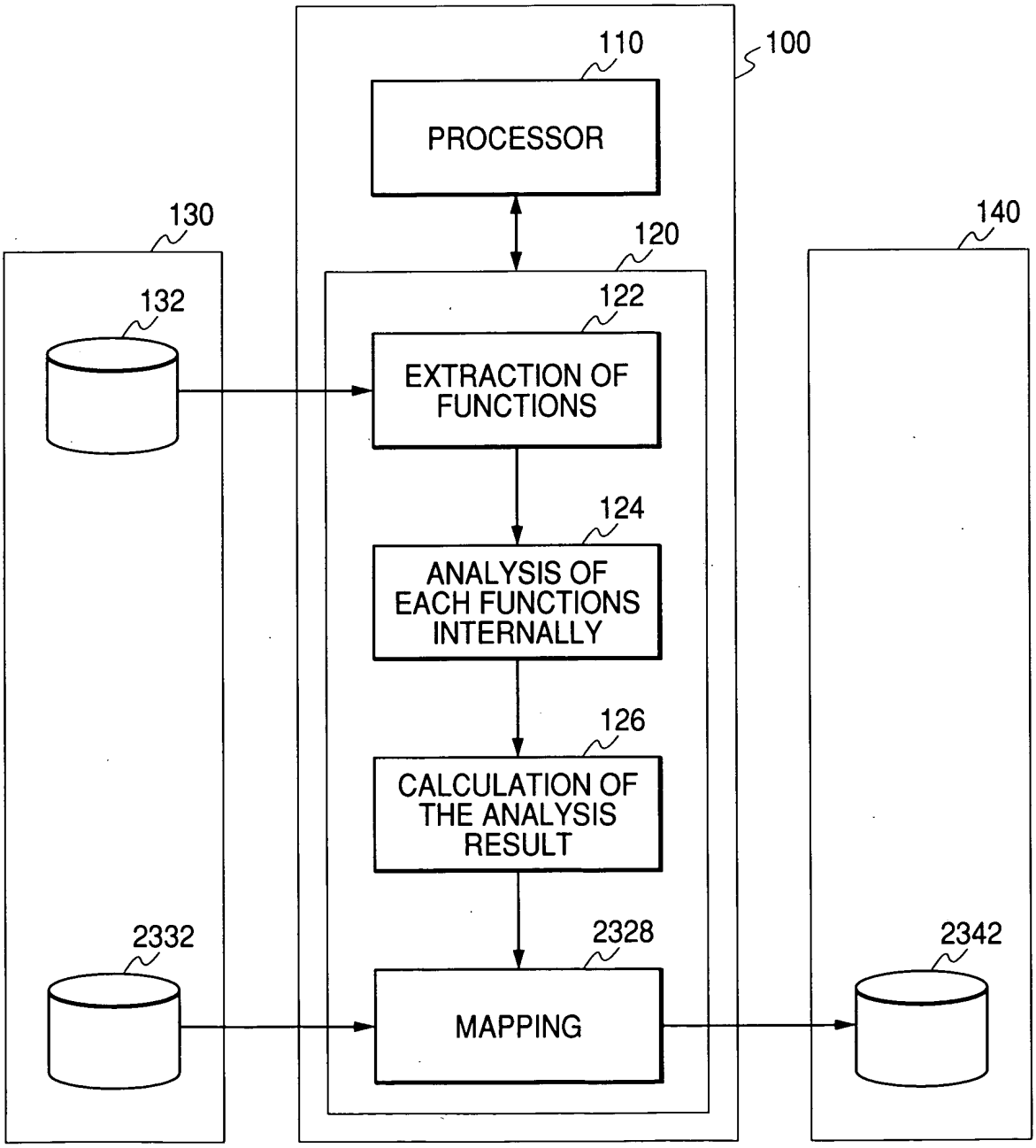
100
110
PROCESSOR
130
120
140
132
122
EXTRACTION OF FUNCTIONS
124
ANALYSIS OF EACH FUNCTIONS INTERNALLY
126
CALCULATION OF THE ANALYSIS RESULT
2332
2328
2342
MAPPING

FIG. 24

PROCESSING UNIT	PREFERABLE NUMBER OF CONDITIONAL BRANCH STATEMENTS
CPU	10 OR MORE
DSP	3 TO 9
DEDICATED LOGIC	2 OR LESS

FIG. 25

FUNCTION NAME	APPROPRIATE PROCESSING UNIT
func_A	DSP
func_B	CPU
func_C	DEDICATED LOGIC

FIG. 26

PROCESSING UNIT	PREFERABLE NUMBER OF LOOP CONTROL STATEMENTS
CPU	3 TO 9
DSP	10 OR MORE
DEDICATED LOGIC	2 OR LESS

FIG. 27

FUNCTION NAME	APPROPRIATE PROCESSING UNIT
func_LA	CPU
func_LB	DSP
func_LC	DEDICATED LOGIC

FIG. 28

FUNCTION NAME	APPROPRIATE CONDITIONAL BRANCH STATEMENT					APPROPRIATE LOOP CONTROL STATEMENT				
	NUMBER	NUMBER OF NESTINGS		VARIABLE GENERATION		NUMBER	NUMBER OF NESTINGS		GENERATION OF VARIABLES FOR THE NUMBER OF REPETITIONS	
		NUMBER OF NESTING STAGES	NUMBER OF CORRESPONDING CONDITIONAL BRANCH STATEMENTS	NUMBER OF CORRESPONDING CONDITIONAL BRANCH STATEMENTS	NUMBER OF VARIABLES		NUMBER OF NESTING STAGES	NUMBER OF CORRESPONDING LOOP CONTROL STATEMENTS	NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES
CPU	10 OR MORE	0	1 OR MORE	0	1 OR MORE	3 TO 9	0	3 TO 9	0	3 TO 9
		1	1 OR MORE	1	1 OR MORE		1	0	1	0
		2 OR MORE	1 OR MORE	2 OR MORE	1 OR MORE		2 OR MORE	0	2 OR MORE	0
DSP	3 TO 9	0	3 TO 9	0	3 TO 9	10 OR MORE	0	1 OR MORE	0	2 OR LESS
		1	3 OR LESS	1	3 OR LESS		1	1 OR MORE	1	2 OR LESS
		2 OR MORE	1 OR LESS	2 OR MORE	1 OR LESS		2 OR MORE	1 OR MORE	2 OR MORE	2 OR LESS
DEDICATED LOGIC	2 OR LESS	0	3 OR LESS	0	3 OR LESS	3 OR LESS	0	3 OR LESS	0	3 OR LESS

FIG. 29

FUNCTION NAME	APPROPRIATE CONDITIONAL BRANCH STATEMENT					APPROPRIATE LOOP CONTROL STATEMENT				
	NUMBER	NUMBER OF NESTINGS		VARIABLE GENERATION		NUMBER	NUMBER OF NESTINGS		GENERATION OF VARIABLES FOR THE NUMBER OF REPETITIONS	
		NUMBER OF NESTING STAGES	NUMBER OF CORRESPONDING CONDITIONAL BRANCH STATEMENTS	NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES		NUMBER OF NESTING STAGES	NUMBER OF CORRESPONDING LOOP CONTROL STATEMENTS	NUMBER OF FUNCTIONS REQUIRED FOR GENERATION	NUMBER OF VARIABLES
CPU	10 OR MORE (K=8)	0 (K=1)	1 OR MORE	0 (K=1)	1 OR MORE	3 TO 9 (K=6)	0 (K=1)	3 TO 9	0 (K=1)	3 TO 9
		1 (K=2)	1 OR MORE	1 (K=2)	1 OR MORE		1 (K=1)	0	1 (K=1)	0
		2 OR MORE (K=3)	1 OR MORE	2 OR MORE (K=3)	1 OR MORE		2 OR MORE (K=1)	0	2 OR MORE (K=1)	0
DSP	3 TO 9 (K=8)	0 (K=1)	3 TO 9	0 (K=1)	3 TO 9	10 OR MORE (K=6)	0 (K=1)	1 OR MORE	0 (K=1)	2 OR LESS
		1 (K=2)	3 OR LESS	1 (K=2)	3 OR LESS		1 (K=2)	1 OR MORE	1 (K=2)	2 OR LESS
		2 OR MORE (K=2)	1 OR LESS	2 OR MORE (K=2)	1 OR LESS		2 OR MORE (K=3)	1 OR MORE	2 OR MORE (K=3)	2 OR LESS
DEDICATED LOGIC	K=6	0 (K=1)	3 OR LESS	0 (K=1)	3 OR LESS	3 OR LESS (K=6)	0 (K=1)	3 OR LESS	0 (K=2)	3 OR LESS

CPU = 3+4+2+2=11
DSP = 6+4+4+6=20
DEDICATED LOGIC = 1+1+6+2+2=12

FIG. 30

FUNCTION NAME	APPROPRIATE PROCESSING UNIT
func_A	DSP
func_B	CPU
func_C	DEDICATED LOGIC
func_LA	CPU
func_LB	DSP
func_LC	DEDICATED LOGIC